dition of the deaf." He states that "50 per cent. of the deaf over 20 years of age are reported in gainful occupations, the percentage for the general population being 50.2 per cent. In the five great occupations, agriculture, manufacture, service, trade and professions the proportions are about the same for the deaf and the general population. Their own achievements have thrown out of court the charge that they are a burden upon society."

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Natural Sines to Every Second of Arc, and Eight Places of Decimals. By Emma Gifford. Published by Mrs. Gifford, Oaklands, Chard, Somerset, 1914. Pp. vi + 543. Price £1.

It is evident to any one who takes the trouble to consider the matter that this is an era of efficiency in the computations of the laboratory and observatory as well as in the work of the great industrial plants of the world. The astronomer, the physicist, and he whom Sir George Greenhill often delights to refer to as the "mere mathematician" are all conscious that the time is past when the individual investigator should compute if he can get some instrument, human or mechanical, to do this work for him. And so we have in our day a remarkable surging forward of the flood of computing devices—slide rules of many types, listing machines, comptometers, cash registers which mechanically add, and all sorts of other devices which do for the computer what he one time was forced to do for himself at great expenditure of energy. And we also have, but in less marked degree, a number of new tables, ingenious little ones like those of Professor Huntington, and ponderous newly-computed ones like those on which M. Andoyer is still engaged. All these aids to computation are healthy signs that the scholar joins the "sharp-lined man of traffic" in seeking the greatest efficiency in his exhausting labors.

Of the recent tables for saving the time of the computer no one is more noteworthy than the one of natural sines which has been computed and recently published by Mrs. Gifford. Georg Joachim computed such a table to ten figures and to every ten seconds, and this was published in 1596, after his death. This table was again printed in 1897, but was carried to only seven figures. Mrs. Gifford, however, has prepared a table extending one figure further than this, namely, to eight places, and has carried it to every second instead of every ten seconds. It is therefore apparent that here is by far the most complete table of natural sines that has ever been attempted. And not only is it the most complete but it is a model of convenience, so that the computer who has occasion to use a table of this kind will have good reason to thank Mrs. Gifford for her great care and patience.

It is hardly possible that such a table can be free from errors, particularly in cases where the last figure is near 5. Aside from this, however, a rather extensive use of the work by one computer for some months has revealed only a single error, namely, in sin 56′ 40″. Mrs. Gifford is correcting the tables in this and other minor respects, however, before issuing them.

The tables should have place in every college library and in every physical laboratory, observatory and mathematical workshop.

David Eugene Smith

Principles of Physics. By Willis E. Tower, Charles H. Smith and Charles M. Turton. P. Blakiston's Son & Company. 1914.

The teaching of high-school physics presents difficult problems. For each teacher there is undoubtedly a "best" text, and it is highly desirable that every teacher have a number of good texts from which to make the selection that seems, in practise, to be the best suited to himself. For this reason the text of Tower, Smith and Turton should be welcome. It does not claim to possess striking peculiarities, but rather to incorporate the best ideas found through extended experience of the authors.

The authors have attempted to adopt what they consider to be the conclusions reached by the "new movement in the teaching of physics." An introductory chapter is followed by one which is given to the explanation of a